Manchester Public Schools

Math - Grade K Unit 1: Building a Community of Mathematicians

UNIT OVERVIEW

GENERAL INFORMATION

Terms:		**Duration:**	20.0 Day(s)	**Start Date:**	08-26-2015	**Finish Date:**	09-23-2015
Subjects:	Mathematics	**Interdisciplinary Approaches:**	STEAM	**Courses:**	ELEM-MA-Mathematics - Grade K		
Year Level(s):	K			**Unit No.**	MPSDC-023332		
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UNIT FOCUS

This launch unit is designed to introduce students to the rituals and routines of math workshop and to the rigor of the Connecticut Core Standards. The four week unit allows time to establish routines necessary for building a classroom community. Students will learn to follow agreed upon rules for speaking and listening and as they begin to build the stamina needed to endure the practice time of math workshop.
This unit is not designed to go in-depth with content standards. The purpose is to familiarize students with the routines and procedures that will be necessary in order for students to successfully meet the Connecticut Core Standards and actively participate in math workshop. Within this unit, you will need to assess all students using the District Benchmark Assessment. Subsequent units will include more thorough instruction on the standards.

PRIOR LEARNINGS / CONNECTIONS

The creation of a numeracy environment is the foundation of math workshop. It is important to invest time and attention in creating supportive classroom communities. This unit of study is the introduction to math workshop and how we will become a community of mathematicians. Students should connect prior experiences with math, including working independently and with a partner.

ADDITIONAL INFORMATION

RESOURCES

No.	Description	Files / Links
RES1	K Pacing Guide - Pacing Guide	https://docs.google.com/a/mpspride.org/document/d/144jrFioAHv6N12X9C93JMt9MNrkCxLPpiYlEzikcxSg/edit?usp=sharing (link)
RES2	Guided Math in Action by Nicki Newton - First 20 Days of Guided Math	https://drive.google.com/a/mpspride.org/file/d/0B1u-SudncFHQRDBlZW1xemRXVHM/view?usp=sharing (link)
RES3	Number Talks by Sherry Parrish -	
RES4	enVision 2.0 - Math Practices Resources	ENVCC_K_MPAPSH.pdf (file) ENVCC_K_MPPosters.pdf (file)
RES5	iPad Apps (Free) - iPad Apps	iPad_Apps Kindergarten.docx (file)
RES6	First 25 Days of Kindergarten - Building a Math Community	https://drive.google.com/a/mpspride.org/file/d/0B6yqp2quUBXKY1R4cnlGd0pLcjA/view?usp=sharing (link)
RES7	Teaching Student Centered Math K-3 (Van de Walle) - Blackline Masters	http://www.ablongman.com/vandewalleseries/Vol_1_BLM_PDFs/V1%20All%20BLMs.pdf (link)
RES8	Renerek Activities - K-5 Math Resource Page	http://www.k-

		5mathteachingresources.com/Rekenrek.html (link)
RES9	Mental Math Activities - K-5 Math Resource Page	http://www.k-5mathteachingresources.com/mental-math.html (link)
RES10	Common Core FlipBook -	http://www.azed.gov/azcommoncore/files/2012/11/kflipbookedited.pdf (link)
RES11	K-8 Publishers' Criteria for CCSS for Math -	http://www.corestandards.org/assets/Math_Publishers_Criteria_K-8_Summer%202012_FINAL.pdf (link)
RES12	CCSS Standards for Mathematical Practice -	http://www.corestandards.org/Math/Practice/ (link)
RES13	CCSS Progressions -	http://ime.math.arizona.edu/progressions/ (link)
RES14	Math Look Fors -	https://drive.google.com/a/mpspride.org/file/d/0B6yqp2quUBXKYlc1NEZOS1dvZ3c/view?usp=sharing (link)
RES15	CCSS Math Focus K-8 -	https://drive.google.com/a/mpspride.org/file/d/0B6yqp2quUBXKRlM1a2MteHFxaTQ/view?usp=sharing (link)
RES16	UCONN - Bridging Practices Among CT Math Educators -	http://bridges.education.uconn.edu/repository (link)

COMMENTS / NOTES

STAGE 1: DESIRED RESULTS – KEY UNDERSTANDINGS

ESTABLISHED GOALS

Curriculum

Common Core Standards

Mathematics : K

2000076 Mathematical Practices

- CCSS.MATH.MP.8 Look for and express regularity in repeated reasoning.
- CCSS.MATH.MP.3 Construct viable arguments and critique the reasoning of others.
- CCSS.MATH.MP.6 Attend to precision.
- CCSS.MATH.MP.7 Look for and make use of structure.
- CCSS.MATH.MP.1 Make sense of problems and persevere in solving them.
- CCSS.MATH.MP.2 Reason abstractly and quantitatively.
- CCSS.MATH.MP.4 Model with mathematics.
- CCSS.MATH.MP.5 Use appropriate tools strategically.

- 920160 Counting & Cardinality

Other Goals

Habits of Mind

- Persisting - Stick to it! Persevering in task through to completion; remaining focused. Looking for ways to reach your goal when stuck. Not giving up.

Learning Personalized

- Element 3: Mindsets

TRANSFER

Students will be able to independently use their learning to ...

T1
Students will be able to independently use their learning to interpret and persevere in solving mathematical problems using strategic thinking and expressing answers with a degree of precision appropriate for the problem context.

T2
Students will be able to independently use their learning to express appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others, and attending to precision when making mathematical statements.

MEANING

UNDERSTANDINGS

Students will understand that ...

U1
Good mathematicians get better at math by doing math everyday.

U2
Good mathematicians talk and listen to each other.

U3
Good mathematicians use the 8 Mathematical Practices.

U4
Math tools help us learn.

U5
Math Workshop has routines.

ESSENTIAL QUESTIONS

Students will keep considering ...

Q1
What do good mathematicians do?

Q2
How do mathematicians work together during math workshop?

ACQUISITION OF KNOWLEDGE AND SKILL

KNOWLEDGE

Students will know ...

K1
What a math community is.

K2
The structure for math time is Math Workshop.

K3
We have rules, rewards and consequences during Math Workshop.

SKILLS

Students will be skilled at ...

S1
Actively participating in Math Workshop.

S2
Using the 8 Mathematical Practices.

S3
Communicating their thinking and listening to the thinking of others.

	K4 Tools are important for math learning.	S4 Following the rules and routines during Math Workshop. S5 Using a variety of math tools. S6 Actively listening to teachers and peers.

STAGE 2: ASSESSMENT EVIDENCE

PERFORMANCE TASK(S)

Coding	Code	Evaluative Criteria	Description

OTHER EVIDENCE

Coding	Code	Evaluative Criteria	Description

STAGE 3: LEARNING PLAN

PRE-ASSESSMENTS

Optional District Benchmark Assessment (September 8 - October 6)

Coding	Code	Description of Learning Activity	Extension / Modification
	LE1	**Duration:** 1.0 Week(s) **Activity:** **Week 1** • Begin daily counting routine • Calendar • Introduce math manipulatives/counters (1 per day) • Teach math procedures in all math areas (rug, Smartboard, board, tables, management procedures etc.)	

	LE2	**Duration:**
		2.0 Week(s)
		Activity:
		Week 2 & 3: What is a Number?/Intro to Math
		
		• **Ongoing Routines**
		  • Continue daily/weekly math routines and counting
		  • Continue exploring math manipulatives/tools
		• **Math Discussion:** What are numbers/why do we need numbers?
		  • Math Hunt (look for numbers around the school)
		  • Math visitors (other grade levels and staff to visit the class and talk about math or read a math book)
		  • Read Aloud books with Numbers
		• **Teach:** How Do I Work in Math class?
		  • Teach how to work with alone (1-2 days)
		  • Teach how to work with a partner (teach a partner game) (1-2 days)
		  • Teach how to work with a group (1-2 days)
		• **Discuss:** How we are becoming mathematicians?
		  • What do good mathematicians do?	

		• Build math routines, rules, norms (make anchor charts) • Do "Show me Math" (have students demonstrate a variety of numbers using fingers or other counters and show how they know)-Beginning of mathematical discourse and using Mathematical Practices in your classroom • Optional Beginning of the Year District Benchmark Assessments (BOY) can be administered (tests Pre-K skills). Use this information when you begin teaching content and implementing Guided Math Groups.	

	LE3	**Duration:**
		1.0 Week(s)
		Activity:
		Week 3: What is math? What are Number Talks? Why do we count?
		• Introduce Number Talks -Follow the K example (Number Talks resource book)
		  • Use a variety of tools (dot cards, Rekenrek, dice, dominos, five frames, number lines, number cards & Picture cards
		  • Plan on modeling everyday one of the number talks-this will be on-going routine
		• Begin having math discussions: What is math? Why do we learn math? Why do we count?	

	LE4	**Duration:**
		2.0 Week(s)
		Activity:
		Weeks 4-5: Focus: What is Math Workshop?
		• Talk about "What Math will look like/sound like in our classroom?" (create Anchor Charts)
		• What is Math Workshop?
		• Introduce the different parts of Math Workshop (create anchor charts)
		  • Review Number Talk Routine
		  • Introduce Mini-lessons
		  • Introduce Math Centers
		  • Introduce Math Journals
		  • Model for students on how to come back to discuss/reflect
		• Math Words - Introduce vocabulary routines
		• Have students practice math centers & parts to the math block daily
		• Be sure to start Guided Math (small group math with teacher) when your class has a good	

		understanding of Math Workshop and can work independently at centers • Use enVision Math 2.0 Teacher Guide to Introduce Mathematical Practices.	